



Curiosity Guide #304

Football Science

Accompanies Curious Crew, Season 3, Episode 4 (#304)

Spinning Coins

Investigation #3

Description

Amaze your friend with this coin-balancing act.

Materials

- Coin or metal washer
- Table
- Stopwatch
- A friend

Procedure

- 1) Challenge a friend to see how quickly he or she can balance a coin on its edge.
- 2) Then try balancing the coin yourself, with one change. Hold the coin with one hand and flick it to make it spin.
- 3) Why does the coin balance so much more easily when it is spun?

My Results

Explanation

The spinning coin has angular momentum, like that of a gyroscope or spinning top. Angular momentum makes the coin's position on its edge very stable. The coin begins to tilt or fall only when it begins to slow down.

The angular momentum of the coin is like what is seen in a good football pass. A football thrown in a spiral also has angular momentum, which allows the football to keep its position in the air and makes the air resistance flow more consistently around the ball. This reduces the drag on the ball and enables the quarterback to complete a much more accurate throw.

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